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GP/2644  
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Request for reconsideration  
6-25-01  
A.T.  
Entered

Applicant: J. Carl Cooper

Examiner: Minsun Oh Harvey  
Art Unit: 2644

Serial No: 08/824,496  
Filed : 03/14/97  
For : Improved IFB System Apparatus and Method

Docket Number: JCC 396A

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June 13, 2001

RE: Office action of 04/11/01, paper # 19

ASSISTANT COMMISSIONER FOR PATENTS  
Washington, D.C. 20231

Dear Sir:

Reconsideration of the rejections of all claims is respectfully requested for the reasons given below as well as for the reasons given in the previous responses.

**Rejection under 35 U.S.C. 103**

Claims 8-17 and 28, 32-36 and 39 were rejected under 35 U.S.C. 112 first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The examiner explains "Correlation circuit which has been claimed in claims 8-17, 28, 32-36 and 39 do not read on figure 2".

Applicant is unsure whether the examiner finds the correlation circuit not enabled, or whether the examiner believes that figure 2 does not encompass the same invention as that claimed using a correlation circuit. Applicant will address both possibilities.

In respect to a separate invention type rejection, this matter has been previously ad-



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dressed in response to the 12/06/99 office action which required election of a single species. In response the applicant explained the relationship between figures 2-4. In the office action following the applicant's explanation, the examiner agreed that claim 1 is generic to all of the figures and that when claim 1 becomes allowable, the dependent claims would be allowable. The examiner did not maintain the election requirement (page 14, of 10/12/00 office action, paper 13, and in particular line 9). Accordingly, the separate species matter has been previously overcome.

In respect to enablement of the correlation circuit, the reasons given in the previous response as to the enablement of these claims is incorporated herein by reference. At page 15 of the specification, in respect to Figure 2, and in particular elements 16, 12 and 14, it is taught:

"... it is preferred to inspect either the IFB (or program) audio from 18, or the mix minus audio from 13 with the adjustment circuit 16, thus allowing adjustment of the delay 12 and/or gain 14 automatically in response to the signal(s). The inventive concepts of performing automatic adjustment will be described in more detail with respect to the preferred embodiment of Figure 3."

Note that Figure 3 references all elements of Figure 2 except the microwave transmitter 19, i.e. elements 9, 10, 12, 13, 14, 16 and 18. Figure 3 shows to automatically adjust elements 12, 14 and 16 of Figure 2 by use of element 15. Accordingly, Figure 3 is a more detailed, automatic adjustment, version of Figure 2.

Note that element 16 is simply an adjustment control which allows the amount of gain or delay to be adjusted, however the adjustment itself is performed by 12 and 14. Simplistically stated, Figure 2 shows adjustment of elements by automatic or manual means and Figure 3 shows details of automatic adjustment.

Element 15 is described in the specification, for example at page 16, second paragraph:

The circuit of Figure 3 shows inspection, for this example by correlation, and adjustment circuit 15a which operates to correlate the talent's microphone audio from 10 with the feedback audio (IFB or program) from 18 to determine the amount of delay of the talent audio contained in the signal at 18 and the necessary gain correction to provide the proper level of cancellation signal for the desired cancellation as established by 16. ... Inspection circuits such as for

example correlation circuits suitable for such use are known to those of ordinary skill in the art, for example as disclosed in U.S. Patent Re. 33,535 (4,703,355). The circuit of Figure 11 of this patent is of particular interest.

The correlation circuit element is admitted to be present in the prior art, namely in Re. 33,535. Figure 11 of Re. 33,535 shows a comparison of two audio signals 133 and 134 with a correlator 135 for determining the delay therebetween. Figure 11 is discussed in detail at column 15, line 9 et seq. In particular it is noted at lines 37 & 38 that as an example, a commercially available component, a TRW TDC 1023 correlator, may be used as 135. It might also be noted that claim 39 of Re. 33,535 recited correlation of the signals. A copy of this patent is enclosed for the examiner's convenience.

MPEP 2164.01 at lines 20-24 states "The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation". At lines 24 & 25 the MPEP states "A patent need not teach, and preferably omits, what is well known in the art". Clearly, the comparison of two signals to determine their delay, such as performed by correlation was well known in the art at the time of filing of the instant application as exhibited by the reference therein to Figure 11 of U.S. Patent Re. 33,535. Furthermore, as suggested in MPEP 2164.01 the instant application omits detailed teaching of what is well known in the art. Clearly the correlation circuit is well known, and consequently enabled, and no detailed description of it need be present in the specification.

Claim 39 was rejected in respect to the step a) of "pitch correction". The examiner requested clarification with respect to pitch correction.

As is well known in the art, variable delays may perform time compression or expansion of the delayed signals by changing the delay. Such delay changes may be accomplished by reading the signal faster or slower than it is written. In this instance the variable delay deals

with audio signals which inherently have pitch, or frequency, characteristics which changes as the variable delay changes. An example of such a pitch change is heard when any type of audio recording, for example a reel to reel tape recorder, is played back at the wrong speed. Pitch correction is taught in U.S. Patent Application serial no. 08/322,069, now Patent 5,920,842, which was referenced at page 13, end of first paragraph in the instant specification, (note amendment filed 07/14/00 incorporating the patent number). The '842 patent describes (column 1, lines 19-30) that when stored signals are produced at increased or decreased speeds (to decrease or increase the delay respectively) the stored signal undergoes a corresponding change in frequency, or pitch. The '842 patent teaches how this change in frequency, or pitch, may be corrected as the delay is varied. Note that claim 28 of the '842 patent deals specifically with changing the delay of an audio signal while correcting pitch artifacts which occur during the varying of the time period. A copy of this patent is enclosed for the examiner's convenience.

The test for enablement is given in the MPEP "[t]he test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation" (MPEP 2164.01 lines 20-24. Clearly one of ordinary skill is taught, and would know to incorporate and use pitch correction without undue experimentation, from the reference to the '842 patent.

Reconsideration of the 35 U.S.C. 112 first paragraph rejection for failing to enable the correlation and pitch correction features is respectfully requested.

#### **Rejection under 35 U.S.C. 102(b)**

Claims 1-52 were rejected under 35 U.S.C. 102(b) as being anticipated by Kirby. The reasons given in the previous response as to the patentability of these claims over Kirby are incorporated herein by reference. Applicant previously pointed out that the claims featured

absence of variable delay of the feedback signal which the examiner has agreed is not found in the prior art of record. In the last office action, the examiner stated applicant's argument is not persuasive because the claims do not claim the absence of the variable delay of the feedback signal. Applicant respectfully requests reconsideration of this rejection and in particular in view of the claim feature of absence of variable delay of the feedback signal. It is believed that the examiner may have overlooked this claimed feature. For example, the second paragraph of claim 1 as presently amended calls for:

said feedback signal and said cancellation signal being applied to a combining circuit to provide said mix minus signal with said feedback signal being applied **without the use of a variable delay circuit.**

The examiner points out that Kirby's variable delay 21 may not change delay at a particular instant. Applicant does not find where Kirby teaches this operation, rather at page 6, column 2, lines 2 & 3 Kirby teaches to change the delays 21 and 22 as changes in the relative delay of the incoming signals are detected. However even if the delay 21 would not change for some time, Kirby's mixed signal 14 is nevertheless delayed and **applied to the combiner 40 by use of the variable delay circuit 21.** Claim 1 does not say that the signal is applied without a varying delay, rather the claim calls for the signal to be **applied without the use of a variable delay circuit.** There is no suggestion to one of ordinary skill in the art found in Kirby to eliminate variable delay 21 and apply the mixed signal 14 directly to 40.

Kirby, at page 5, first paragraph teaches that the variable delays 21 and 22 are used to allow a shorter filter 32 to be used. Kirby teaches this despite the second variable delays being more expensive than one variable delay, and more so than a fixed delay as the examiner suggests. Kirby teaches away from applying the signal 14 to 40 without the use of a variable delay as in my invention. In my invention, the absence of the second variable delay 21 is a significant improvement over Kirby, the improvement including better performance and lower cost.



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Kirby does not show, and teaches away from, the claim elements which call for the feedback signal being applied to the combining circuit without the use of a variable delay circuit. This feature is specifically brought out in the claims, for example in Claim 1 "said feedback signal being applied without the use of a variable delay circuit".

The examiner has already agreed that absence of variable delay of the feedback signal is not found in the prior art of record, and that feature is present in all of the claims at issue. Reconsideration of the present rejections and allowance of claims 1-53 is respectfully solicited.

Respectfully submitted,

J. Carl Cooper  
Reg. #34,568

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CERTIFICATE UNDER 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited this day with the United States Postal Service postage prepaid as Certified First Class Mail, certificate no. 7099 3220 0009 8861 1164 in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

Date: June 13, 2001

J. Carl Cooper, Reg. #34,568